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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,529	09/17/2001	Mark Peting	50588/339	8578
32641 7590 03/07/2007 DIGEO, INC C/O STOEL RIVES LLP 201 SOUTH MAIN STREET, SUITE 1100 ONE UTAH CENTER SALT LAKE CITY, UT 84111			EXAMINER AHN, SAM K	
			ART UNIT	PAPER NUMBER
			2611	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/07/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

09/955,529

Applicant(s)

PETING, MARK

Examiner

Sam K. Ahn

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-12,14-16,18-22,24-31 and 33-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-12,15,16,18,21,22,24-31 and 33-40 is/are rejected.
- 7) ☒ Claim(s) 14,19,20 and 41-44 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see p.19, filed 12/18/06, with respect to the rejection(s) of claim(s) 1,2,12,21,22,30 and 31 under 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Ohkubo et al. US 6,151,369 (Ohkubo).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1,2,12,15,21,22,30 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohkubo et al. US 6,151,369 (Ohkubo).

Regarding claim 1, Ohkubo teaches a multimedia receiver system which provides drift compensation for a plurality of different satellite transponder signals or cable/broadcast signals (multimedia signals) received over a common low-noise block downconverter (LNB) comprising: a system-level drift calculation logic (14a –14d, 13a –13d) to calculate an average drift amount among said

multimedia signals (OFDM, note col.4, lines 34-38) in a first group of multimedia signals (K subcarrier signals, note col.3, line 2) received over a common LNB (1); and a system-level drift correction logic (11,12a,12b) to correct drift of each of said first group of multimedia signals based on said average drift amount (X1 – X4).

Regarding claim 2, Ohkubo further teaches a signal-level drift calculation logic (13a and 14b) to calculate a difference (12a) in drift between each individual multimedia signal and said average drift amount; and the signal-level drift correction logic (11,12a,12b) to correct drift for said each individual multimedia signal based on said difference.

Regarding claim 12, the claim is rejected as applied to claim 1 with similar scope.

Regarding claim 15, the claim is rejected as applied to claim 2 with similar scope.

Regarding claim 21, the claim is rejected as applied to claim 1 with similar scope.

Regarding claim 22, the claim is rejected as applied to claim 2 with similar scope.

Regarding claim 30, the claim is rejected as applied to claim 1 with similar scope.

Regarding claim 31, the claim is rejected as applied to claim 2 with similar scope.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4,16,18,24,25,33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo et al. US 6,151,369 (Ohkubo) in view of Wu et al. US 2002/0122383 A1 (Wu).

Regarding claim 4, Ohkubo teaches all subject matter claimed, as applied to its depending claim. Furthermore, as previously explained, Ohkubo teaches system-level drift calculation logic (14a –14d, 13a –13d) and system-level drift correction logic (11,12a,12b). However, Ohkubo does not teach having additional system-level drift calculation logic and second system-level drift correction logic.

Wu teaches diversity plurality of reception paths wherein each path comprises frequency offset correction to calculate different group of multimedia signals (S1,S4...S3070 in Fig.6) received over first and second LNB (Antenna\_1, Antenna\_2). Thus, by incorporating the diversity transmission and reception of Wu in the system of Ohkubo, it would have been obvious to one skilled in the art at the time of the invention of having additional system-level drift calculation logic and second system-level drift correction logic in each reception path of Wu for the purpose of taking advantage of a diversity receiver to combat intersymbol interference, thus achieving frequency drift correction of signals received from each of LNB.

Regarding claim 16, the claim is rejected as applied to claim 4 with similar scope.

Regarding claim 18, the claim is rejected as applied to claim 4 with similar scope.

Regarding claim 24, the claim is rejected as applied to claim 4 with similar scope.

Regarding claim 25, the claim is rejected as applied to claim 4 with similar scope.

Regarding claim 33, the claim is rejected as applied to claim 4 with similar scope.

Regarding claim 34, the claim is rejected as applied to claim 4 with similar scope.

4. Claims 5,7,9,10,27-29,36,38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo et al. US 6,151,369 (Ohkubo) in view of Wu et al. US 2002/0122383 A1 (Wu) and Hagberg et al. US 6,049,255 (Hagberg, cited previously).

Regarding claims 5,7,27 and 36, Ohkubo further teaches a front end having tuner (3 in Fig.1) to provide said first group of multimedia signals (K subcarrier signals, note col.3, line 2). Thus, by incorporating the diversity transmission and reception of Wu in the system of Ohkubo, it would have been obvious to one skilled in the art at the time of the invention of having plurality of tuners in each reception path of Wu for the purpose of taking advantage of a diversity receiver to combat intersymbol interference, thus achieving frequency drift correction of signals received from each of LNB.

And furthermore, although Ohkubo teaches frequency adjustment using a VCO (10 in Fig.1) adjusting center frequency of the tuner, Ohkubo does not explicitly disclose a receiver comprising a phase-locked loop (PLL).

Hagberg teaches a VCO (105 in Fig.1) comprised in a PLL, which is well-known to one skilled in the art. Thus, by incorporating the teaching of Hagberg in the receiver of Ohkubo of synchronizing using the PLL, it would have been obvious to one skilled in the art at the time of the invention by receiving the output of frequency offset detector (11 in Fig.1 of Ohkubo) to be coupled to the PLL of Hagberg for the purpose of effectively adjusting the control frequency provided to the tuner, hence receive desired multimedia signals.

Regarding claim 7, the claim is rejected as applied to claim 5 with similar scope.

Regarding claim 27, the claim is rejected as applied to claim 5 with similar scope.

Regarding claim 36, the claim is rejected as applied to claim 5 with similar scope.

Regarding claim 9, Hagberg further teaches PLL circuit (Fig.1) comprised of divide by N module (106) for precisely adjusting.

Regarding claim 28, the claim is rejected as applied to claim 9 with similar scope.

Regarding claim 38, the claim is rejected as applied to claim 9 with similar scope.

Regarding claim 10, Hagberg further teaches a sigma-delta A/D module (107) for removing jitter from an output of said divide by N module.

Regarding claim 29, the claim is rejected as applied to claim 10 with similar scope.

Regarding claim 39, the claim is rejected as applied to claim 10 with similar scope.

5. Claims 11 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo et al. US 6,151,369 (Ohkubo) in view of Crawford USP 6,633,616 B2 (cited previously).

Regarding claim 11, Ohkubo teaches all subject matter claimed, as applied to claim 2 or 31. Ohkubo, as explained previously, teaches said system-level drift correction logic (11,12a,12b) to correct drift for each individual multimedia signal, and although Ohkubo teaches a VCO, Ohkubo does not teach a numerically controlled oscillator (NCO).

Crawford teaches (see Fig.3) a NCO (316) in a receiver to correct offsets. As is well-known in the art that the function of NCO and VCO are equivalent, and at the time of the invention, it would have been obvious to a person of ordinary skill in the art to replace a VCO with NCO. Applicant has not disclosed that using NCO provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with VCO because it provides equivalent function. Therefore, it would have been obvious to combine to one of ordinary skill in this art to modify the VCO with NCO to obtain the invention as specified in claim.



Regarding claim 40, the claim is rejected as applied to claim 11 with similar scope.

6. Claims 6,8,26,35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo et al. US 6,151,369 (Ohkubo) in view of van Driest US 6,314,145 B1.

Regarding claim 6, Ohkubo teaches all subject matter claimed, as applied to claim 1,21 or 30. And although Ohkubo teaches said system-level drift calculation logic, Ohkubo does not explicitly teach difference logic and an averager as claimed.

Van Driest teaches frequency offset compensator (52 in Fig.2) comprising difference logic (104 in Fig.3) to calculate a difference between a desired frequency value (102) and an actual frequency value (100) for each signal; and an averager (106) to calculate the average difference between said desired frequency values and said actual frequency values (note col.5, line 64 – col.6, line 10 wherein the frequency offset compensator is dependent on modulation, thus by using FSK, the compensator would be calculating frequency values).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of van Driest in the system-level drift calculation logic of Ohkubo for the purpose of synchronizing the receiver to the received signal in coherent detection receiver with rigid synchronization, as taught by van Driest (note col.1, lines 42-47).

Regarding claim 26, the claim is rejected as applied to claim 6 with similar scope.

Regarding claim 35, the claim is rejected as applied to claim 6 with similar scope.

Regarding claim 8, Ohkubo in view of van Driest teach all subject matter claimed, as applied to claim 6. Ohkubo further teaches the VCO (10 in Fig.1) receiving an average drift amount to make adjustments, however, does not teach a PLL.

Van Driest teaches a VCO in a PLL (44 in Fig.1), coupled to a tuner (84). Thus, by incorporating the PLL to the VCO of Ohkubo, and providing the average drift amount to the VCO of Ohkubo, system-level frequency adjustment is made based on said average drift amount. The motivation to combine as such is to provide the average drift amount calculated by van Driest, which provides rigid synchronization, as taught by van Driest (note col.1, lines 42-47) to the system of Ohkubo.

Regarding claim 37, the claim is rejected as applied to claim 8 with similar scope.

#### ***Allowable Subject Matter***

7. Claims 14,19,20, 41,42,43 and 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. The following is a statement of reasons for the indication of allowable subject matter:  
Present application discloses a receiver performing frequency drift or offset calculation. Closest prior arts, as explained above, teach all subject matter claimed. However, prior art does not teach or suggest in combination the limitation of finding

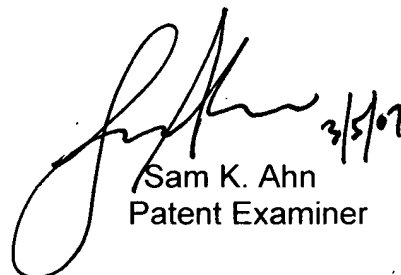
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an average of a difference between each of the carrier frequencies and corresponding reference frequencies to correct drift.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sam K. Ahn  
Patent Examiner